

SN 10/713672; Meinhardt;  
Art Unit 2878; Examiner Thanh X. Luu

### REMARKS

In response to the Examiner's requirement the title has now been amended to:

**DEPTH-OF-FIELD MICRON RESOLUTION VELOCIMETRY  
WITH PULSED IMAGES OF INJECTED SOLID PARTICLES**

It is believed that this title is entirely appropriate since it reflects principal features of the allowed claims.

Claims 20 and 31 have been amended to correct the informality pointed out by the Examiner.

Claim 45 is believed clearly patentable over Horiuchi for the following reasons. Horiuchi deals with the measurement and the identification of particles **already contained in the fluid medium that is being examined**. The present invention, in sharp contrast, **deliberately injects particles into a fluid for the sole purpose of measuring the fluid velocity**. Furthermore, in Horiuchi the fluid velocity is **being controlled by the measurement apparatus**, in order to facilitate the measurement and analysis process. By contrast, according to the present invention the velocity of the fluid is determined by the fluid itself, and the apparatus operates to observe and measure that velocity.

Turning now to the wordage of Claim 45, the following passages provide clear patentable distinction over Horiuchi:

- "(a) selecting solid particles that will follow the motion of the fluid body;"
- "(b) injecting a plurality of the solid particles ..."
- "(c) repetitively applying a short pulse of light at periodic intervals ..."

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It should be noted that in Horiuchi the light pulses are not periodic. See Horiuchi at Column 4, Lines 53-56, where it is stated that:

"The beam generation control means controls commencement of driving the beam generating means according to the varying flow velocity of the sample fluid."

In sharp contrast, the present invention applies light pulses that are periodic – that is, evenly spaced apart in time. This is an essential feature of the present invention.

The result desired to be obtained by the present invention is entirely different from Horiuchi. Horiuchi measures the qualities of particles, i.e., cells, and **controls** the velocity of the fluid in order to enable measurement of the particles. Applicants' invention, on the other hand, deliberately injects particles in order to measure the velocity of the fluid. The end results of the two instruments are entirely different, and their methods of operation are entirely different.

In summary, Claims 1-19 had previously been cancelled; Claims 20 and 31 have now been amended as to form; and Claim 45 has now been amended as to form and substance. Claims 41-44 and 58-59 stand withdrawn.

Favorable action is solicited.

October 13, 2005

Respectfully submitted,



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